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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/914,319	08/24/2001	Kosuke Seiki	11283-014001	2187

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EXAMINER
DAVIS, RUTH A

ART UNIT	PAPER NUMBER
1651	

DATE MAILED: 09/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Offic Action Summary	Application No.	Applicant(s)	
	09/914,319	SEIKI ET AL.	
	Examiner	Art Unit	
	Ruth A. Davis	1651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 June 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Applicant's amendment filed June 16, 2003 has been received and entered into the case. Claims 8 – 19 have been added. Claims 1 – 19 are pending and have been considered on the merits. All arguments have been fully considered.

Claim Objections

Claim objections have been withdrawn due to amendment.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1 – 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 and its dependents are drawn to a method for predicting restenosis, however are rendered vague and indefinite because the method fails to recite how one practicing the method would predict restenosis. Moreover, it is unclear what L-PGDS concentration would indicate, or predict, the occurrence of restenosis.

Claim 9 and its dependents are drawn to a method for predicting restenosis, however are rendered vague and indefinite because while the measuring step appears to require only a single measurement, the predicting step requires a comparison of before and after the coronary intervention. It is unclear how many measurements of L-PGDS must be taken to practice the method of the invention.

Claims 8 and 9 are indefinite for reciting "substantially increases" because it is unclear what applicant regards as a "substantial" increase, as the term is not adequately defined by the claim language or specification.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1 – 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eguchi.

Applicant claims a method for predicting restenosis following coronary intervention, the method comprising measuring lipocalin-type prostaglandin D synthase (L-PGDS) in a body fluid extracted from a subject at least twice, from between immediately before and 48 hours after the coronary intervention; and predicting the development of restenosis based on the L-PGDS concentration. Specifically, wherein the L-PGDS concentration is measured twice within 48 hours after the intervention; at least once before and once after the intervention; wherein the concentration is measured using an immunological measuring method; the body fluid is blood or urine and the blood taken from coronary or peripheral blood. The coronary intervention is PTCA, DCA, TEC, Rotablator, excimer laser coronary angioplasty or intracoronary stenting; and restenosis is predicted not to occur if the levels increase, and is predicted to occur when levels stay the same at 48 hours after intervention. Applicant additionally claims the method wherein levels are measured at varying times relative to the intervention.

Eguchi teaches methods wherein coronary and peripheral blood samples taken before and 1, 2 and 7 days after PTCA, and are measured for L-PGDS concentration via immunoassay (14690, left).

Eguchi does not specifically teach the method wherein restenosis is predicted, or wherein a specific increase/decrease in the levels indicate a prediction (or occurrence) of restenosis. However, Eguchi does teach that acute occlusion (or restenosis) often happens within several hours of PTCA when L-PGDS levels are decreasing in the cardiac vein (14693, right) whereas restenosis hardly occurs several days after PTCA when L-PGDS levels have increased (14693,

right). At the time of the claimed invention, it would have been obvious to one of ordinary skill in the art to practice the methods of Eguchi in predicting an occurrence of restenosis because of the disclosed indications as cited above. Although Eguchi does not teach indications of fluctuating levels at certain times relative to the intervention, it would have been well within the purview of one of ordinary skill in the art to measure L-PGDS levels at varying times as a matter of routine experimentation. Moreover, at the time of the claimed invention, one of ordinary skill in the art would have been motivated by the teachings of Eguchi to practice the method with a reasonable expectation for predicting restenosis.

Applicant argues that Eguchi does not teach predicting restenosis that occurs 3 – 4 months after the intervention.

However, these arguments fail to persuade because as stated above, Eughi clearly teaches measuring L-PGDS levels before and after coronary intervention to determine occlusions. Although Eguchi does not state the measurements are used to predict restenosis, the method steps are the same, and are certainly used to predict acute occlusion. Therefore, at the time of the claimed invention, one of ordinary skill in the art would certainly have been motivated to practice the steps of Eguchi with a reasonable expectation for successfully prediciting restenosis.

6. Claims 1 – 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oda.

Applicant claims a method for predicting restenosis following coronary intervention, the method comprising measuring lipocalin-type prostaglandin D synthase (L-PGDS) in a body fluid

extracted from a subject at least twice, from between immediately before and 48 hours after the coronary intervention; and predicting the development of restenosis based on the L-PGDS concentration. Specifically, wherein the L-PGDS concentration is measured twice within 48 hours after the intervention; at least once before and once after the intervention; wherein the concentration is measured using an immunological measuring method; the body fluid is blood or urine and the blood taken from coronary or peripheral blood. The coronary intervention is PTCA, DCA, TEC, Rotablator, excimer laser coronary angioplasty or intracoronary stenting; and restenosis is predicted not to occur if the levels increase, and is predicted to occur when levels stay the same at 48 hours after intervention. Applicant additionally claims the method wherein levels are measured at varying times relative to the intervention.

Oda teaches methods for predicting ischemic diseases by measuring L-PGDS in body fluids (abstract). Specifically, Oda teaches a method wherein coronary and peripheral blood is collected before and after PTCA, and is measured for L-PGDS via immunoassay (example 4). Oda teaches that such methods enable prognosis, or prediction of ischemic conditions (example 4).

Oda does not specifically teach the method wherein restenosis is the ischemic condition predicted, or wherein a specific increase/decrease in the levels indicate a prediction (or occurrence) of restenosis. However, at the time of the claimed invention, it was well known in the art that restenosis is an ischemic condition. In support, Scarborough (US 5807828) teaches ischemic syndromes include restenosis (col.1 line 24-34). Although Oda does not teach indications of fluctuating levels at certain times relative to the intervention, it would have been well within the purview of one of ordinary skill in the art to measure L-PGDS levels at varying

times as a matter of routine experimentation. Moreover, at the time of the claimed invention, one of ordinary skill in the art would have been motivated to practice the methods of Oda with a reasonable expectation for successfully predicting restenosis.

Applicant fails to set for arguments regarding this rejection. However, Examiner has applied arguments made relative to the 102(b) rejection, in that Oda does not teach predicting restenosis.

However, this argument fails to persuade because as stated above, Oda clearly teaches measuring L-PGDS levels before and after coronary intervention to predict the occurrence of ischemic conditions. Therefore, at the time of the claimed invention, one of ordinary skill in the art would certainly have been motivated to practice the method of Oda with a reasonable expectation for successfully prediciting restenosis.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ruth A. Davis whose telephone number is 703-308-6310. The examiner can normally be reached on M-H (7:00-4:30); altn. F (7:00-3:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Wityshyn can be reached on 703-308-0196. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-4242 for regular communications and 703-308-4242 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.

Ruth A. Davis; rad
August 28, 2003

LEON B. LANKFORD, JR.
PRIMARY EXAMINER